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Contents: Industrial Waste

Effective Date: **February 2004**

Point of Contact: [Industrial Waste Program Manager](#)

Section	Overview of Content (see section for full process)
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1. Generating and Characterizing Industrial Waste	<ul style="list-style-type: none">• Review pollution prevention and waste minimization techniques to minimize waste generation.• Determine if waste to be generated is industrial.
2. Accumulating Industrial Waste	<ul style="list-style-type: none">• Determine packaging for the waste.• Segregate waste streams.• Label container.• Provide secondary containment when necessary.• Store waste in designated accumulation area.• Maintain analytical records.• Maintain ownership and responsibility for waste until it is transferred for disposal.• Secure container lid tightly and ensure no further waste is added.
3. Submitting Industrial Waste for Disposal	<ul style="list-style-type: none">• Complete and submit forms.• Obtain approvals before placing waste in designated area.
4. Used Oil For On-Site Energy Recovery	<ul style="list-style-type: none">• Ensure used oil meets criteria.• Submit analytical report.• Store used oil within appropriate containers/tanks.
5. Managing Recyclables	<ul style="list-style-type: none">• See this section for managing the following recyclables:<ul style="list-style-type: none">◦ Aerosol Cans

- Aerosol Cans;
- Batteries for Reclamation or Recycling;
- Bottles and Cans;
- Cardboard;
- Excess Equipment;
- Lead Solder Waste Being Collected for Recycling;
- Paper (Magazines, Newspaper, Office Paper, Phonebooks);
- Toner Cartridges (Printer and Toner);
- Scrap Metal;
- Used Oil Filters

[6. Industrial Waste for Off-Site Energy Recovery](#)

- Thoroughly review/characterize waste stream.
- Review characterizations.
- Designate final approval.
- Place approved waste in appropriate container.
- Clearly label contents of all waste.
- Prepare waste for shipping.

[Definitions](#)

Exhibits

[List of Industrial and Other Special Wastes](#)
[Waste Oil Analysis Requirements](#)

Forms

None

Training Requirements and Reporting Obligations

This subject area contains training requirements. See the [Training and Qualifications](#) Web Site.

This subject area does not contain reporting obligations.

References

6 NYCRR Part 374-2 and 225-2, Used Oil Specifications

40 CFR 262.11, Hazardous Waste Determination (EPA 1987)

[Chemical Management System](#) Web site

[Chemicals, Working With](#) Subject Area

[Hazardous Waste Management](#) Subject Area

[How Do I Manage this Waste Stream?](#) Web site

[How to Manage the Waste Stream Web site](#)

[Lead](#) Subject Area.

[Liquid Effluents](#) Subject Area

NYSDEC - Petroleum Bulk Storage, SCDHS Article 12

[PCB Management](#) Subject Area

[Pollution Prevention and Waste Minimization](#) Subject Area

[Pollution Prevention](#) Web site

[Radioactive Waste Management](#) Subject Area

[Scrap Yard Process Knowledge Certification Form \(PKCF\)](#), [Procurement and Property Management](#) Web site

[Spill Response](#) Subject Area

[Storage and Transfer of Hazardous and Nonhazardous Materials](#) Subject Area

[Training and Qualifications](#) Web Site

[Work Planning and Control for Experiments and Operations Work Planning](#) Subject Area

Standards of Performance

All staff and guests shall comply with applicable Laboratory policies, standards, and procedures, unless a formal variance is obtained.

All staff and guests shall promptly report accidents, injuries, ES&H deficiencies, emergencies, and off-normal events in accordance with procedures.

Managers shall analyze work for hazards, authorize work to proceed, and ensure that work is performed within established controls.

Managers shall ensure that work is planned to prevent pollution, minimize waste, and conserve resources, and that work is conducted in a cost-effective manner that eliminates or minimizes environmental impact.

Before waste is generated, managers shall ensure that it has a funded and available disposition pathway. Managers shall ensure that all hazardous materials and waste have an identified owner who is accountable for its proper disposition.

All staff and users shall identify, evaluate, and control hazards in order to ensure that work is conducted safely and in a manner that protects the environment and the public.

All staff and users shall ensure that they are trained and qualified to carry out their assigned

responsibilities, and shall inform their supervisor if they are assigned to perform work for which they are not properly trained or qualified.

All staff and users shall ensure that environmental effluents, emissions, and wastes associated with their work are as low as reasonably achievable (also referred to as "E-ALARA").

Management System


This subject area belongs to the **Environmental Management System** management system.

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Introduction: Industrial Waste

Effective Date: **February 2004**

Point of Contact: [Industrial Waste Program Manager](#)

This subject area applies to all BNL staff and non-BNL staff conducting work at facilities owned, leased, or operated by BNL. It also applies to BNL staff conducting work off-site, when the waste generated by the off-site work will be managed at BNL.

This subject area applies to all industrial wastes. **It does not apply to radioactive waste, hazardous waste, mixed waste, medical wastes, or regular trash (Note: BNL recyclables are covered in the section [Managing Recyclables](#)).**


BNL is committed to integrating environmental stewardship into all facets of our missions. This stewardship includes proper management of all waste streams created during performance of Laboratory research and operations. This subject area describes how "industrial and other special wastes" are managed. Failure to follow the requirements in this subject area can result in impact to the environment (e.g., contamination of landfills, soil, air, surface or groundwater); impact to human health and safety; disciplinary action; enforcement actions by regulatory agencies (including penalties, fines and shutdown of operations); and significant characterization or clean-up expenses for your project or the Laboratory.

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Subject Area: **Industrial Waste**

1. Generating and Characterizing Industrial Waste

Effective Date: **February 2004**

Point of Contact: [Industrial Waste Program Manager](#)

Applicability

This subject area applies to BNL staff and non-BNL staff working at facilities owned, leased, or operated by BNL, who generated and characterize industrial waste. It also applies to BNL staff conducting work off-site, when the waste generated by the off-site work will be managed at BNL.

Required Procedure

This procedure applies to all industrial wastes. It does not apply to radioactive waste, hazardous waste, mixed waste, medical wastes, or regular trash.

Step 1	<p>Before waste is generated, the responsible individual (waste generator) reviews pollution prevention and waste minimization techniques to minimize waste generation, and ensure proper management of waste that cannot be avoided.</p> <ul style="list-style-type: none">• During project-planning phases, identify any project wastes, emissions or effluents, and obtain any required permits. See the Work Planning and Control for Experiments and Operations Subject Area.• Apply technically feasible and economically practical pollution prevention or waste minimization techniques. See the Pollution Prevention and Waste Minimization Subject Area.• Ensure that a disposal pathway exists for all project-related waste streams. Contact your Environmental Compliance Representative (ECR) or the Waste Management Division for assistance.
Step 2	<p>Wastes that will be generated must be characterized to ensure they are properly</p>

managed and disposed. The waste generator must determine if the waste to be generated is industrial waste.

- If the waste is listed in the exhibit [List of Industrial and Other Special Wastes](#), and has not been contaminated by other hazardous materials, then it is industrial waste and must be managed in accordance with this subject area.
- If the waste is not clearly listed on the List of Industrial and Other Special Wastes, then you must characterize the waste and document the determination. Acceptable forms of documentation include work planning documents, process assessment forms, and the [Nonradioactive Waste Control Form](#) in the [Hazardous Waste Management](#) Subject Area.

Note: Your [Waste Management Representative \(WMR\)](#) or [Environmental Compliance Representative \(ECR\)](#) can assist in characterizing and managing industrial wastes.

Guidelines

When in doubt, manage the waste conservatively, in accordance with the [Hazardous Waste Management](#) Subject Area's requirements, and allow the Waste Management Division to make the ultimate determination on whether the waste is hazardous, based on the information provided by the generator and any analytical data.

Refer to the [How Do I Manage this Waste Stream?](#) Web site for additional guidance on managing a variety of waste streams.

Refer to the [Hazardous Waste Generator Characterization Guidance](#) exhibit in the [Hazardous Waste Management](#) Subject Area to aid in determining whether waste should be managed as hazardous waste.

References

[Hazardous Waste Management](#) Subject Area

[How Do I Manage this Waste Stream?](#) Web site

[Pollution Prevention and Waste Minimization](#) Subject Area

[Work Planning and Control for Experiments and Operations Work Planning](#) Subject Area


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2. Accumulating Industrial Waste

Effective Date: **February 2004**

Point of Contact: [Industrial Waste Program Manager](#)

Applicability

This information applies to BNL staff and non-BNL staff working at facilities owned, leased, or operated by BNL, who accumulate industrial waste. It also applies to BNL staff conducting work off-site, when the waste generated by the off-site work will be managed at BNL.

Required Procedure

This section applies to industrial waste. It does not apply to recyclables, radioactive waste, hazardous waste, mixed waste, medical wastes, or regular trash.

Step 1


Before generating waste, the responsible individual (waste generator) contacts their [Waste Management Representative \(WMR\)](#) or [Environmental Compliance Representative \(ECR\)](#) to determine the appropriate packaging for the waste.

Select appropriate containers that are in good condition (structurally sound), and made of materials that are compatible with the waste. (Refer to the [Chemicals, Working with](#) Subject Area for additional information).

All staff who handle chemicals or have responsibility for managing waste must be familiar with appropriate handling and emergency procedures. Before handling chemicals or managing waste, complete any required training. See the [Training and Qualifications](#) Web Site.

- **Do not** use containers that are dented, severely rusted, have apparent structural defects and/or deterioration, are leaking or otherwise damaged.
- **Do not** use containers that previously contained materials that are incompatible with the waste you are adding.
- **Do not** use containers that already have another kind of material or waste in them, unless you have received prior approval from your WMR. **Note:** Before reusing a container, remove/obliterate any labels that identify the previous contents to prevent confusion regarding the contents (as long as

	<p>previous contents to prevent confusion regarding the contents (as long as the container meets the definition of "empty.") Exception: Leave contents labels on gas cylinders.</p> <ul style="list-style-type: none"> • Do not fill containers of liquid wastes greater than 90% capacity, to allow sufficient head space for expansion. • For 55-gallon drums or containers with greater volumes, use suitable containers (stock items available from Supply & Materiel: open top 55-gallon drum, BNL stock # K60643; bung hole 55-gallon drum, BNL stock # K60646). See the Guidelines below for additional information.
Step 2	<p>Segregate waste streams. Do not mix different types of wastes together, as this may make recycling impossible, cause a chemical reaction, or result in a mixture that needs to be managed as a hazardous waste.</p>
Step 3	<p>Label the container with the green Nonhazardous Waste Label*, and additionally, add the following to oil-waste labels: "Used Oil". Otherwise, clearly identify the contents (e.g., "scrap metal, solder). Labels must be legible and visible for inspection.</p> <ul style="list-style-type: none"> • *Labels are stock items that can be obtained from Supply & Materiel (BNL stock # S33829). • For waste containers placed inside closed secondary containers (e.g., an overpack drum), also place a label on the secondary container.
Step 4	<p>Provide secondary containment for the waste container under the following circumstances:</p> <ul style="list-style-type: none"> • If there is a potential for a spill or leak of liquid to reach a drain or the environment; or • If >250 gallons of liquid wastes, or over 2,000 lbs. of solid wastes are being stored. See the Storage and Transfer of Hazardous and Nonhazardous Materials Subject Area for additional requirements. • If the site's Spill Prevention Control and Countermeasure (SPCC) Plan requires (Note: SPCC Plan revisions [effective 10/03] specify measures to be taken for the storage of oils >55 gals. Oils in >55 gal. containers must be kept in SPCC-designated areas). <p>Maintain secondary containment free from accumulated liquids (e.g., spills, rainwater). If incompatible waste streams are stored within the same location, then incompatible wastes must be stored in separate containment areas.</p>
Step 5	<p>Store the waste in an appropriate, designated accumulation area in a way that prevents any release to the environment. See the Guidelines below.</p> <ul style="list-style-type: none"> • Keep the container closed at all times, except when waste is being added to or removed from the container; • Provide adequate control of containers to ensure that unauthorized persons do not put other waste types in the container; • Do not open, handle, or store containers in a manner that may rupture the container, or cause it to leak;



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3. Submitting Industrial Waste for Disposal

Effective Date: **February 2004**

Point of Contact: [Industrial Waste Program Manager](#)

Applicability

This information applies to BNL staff and non-BNL staff working at facilities owned, leased, or operated by BNL, who submit industrial or special wastes for disposal. It also applies to BNL staff conducting work off-site, when the waste generated by the off-site work will be managed at BNL.

Required Procedure

This section applies to Industrial waste. It does not apply to recyclables, radioactive waste, hazardous waste, mixed waste, regulated medical wastes, or regular trash (stationery, food, non-recyclable paper, other office debris).

Industrial and special waste being submitted for disposal must be accompanied by a completed [Nonradioactive Waste Control Form](#). It must also be accompanied by a [Process Knowledge Certification Form](#), if it was stored in a radiological area. See the [Hazardous Waste Management](#) Subject Area.

The waste generator follows this procedure to submit industrial or special waste for disposal.

Step 1	Complete a Nonradioactive Waste Control Form . See the Hazardous Waste Management Subject Area. Follow the instructions on the form and provide all required information, ensure that it is accurate and complete, and then date the form and sign the certification statement.
Step 2	If the waste has not been in a Radiological Area, then proceed to Step 5. If the waste has been in a Radiological Area, then proceed to Step 3.
Step 3	If the waste has been in a Radiological Area, initial the space provided on the lower section of the Nonradioactive Waste Control Form located beneath the "precautions" section. Transfer the Nonradioactive Waste Control Form number onto the upper right-hand corner of the Process Knowledge Certification Form

	(PKCF) . Respond to each question on the PKCF regarding the possible radioactivity of the waste.
Step 4	Submit the Nonradioactive Waste Control Form (and the Process Knowledge Certification Form, if required) to the Waste Management Representative (if applicable) or the Waste Management Division Program Manager .
Step 5	<p>Notify and obtain approval from the designated waste storage area manager before placing waste into the area. Move the waste to the designated area.</p> <p>Note: If you do not have access to a designated storage area, or it is not practical to move the waste, then notify Waste Management of the location of the waste and make arrangements for special pick-up.</p>

Guidelines

Generators should retain a copy of the Nonradioactive Waste Control Form and the Process Knowledge Certification Form for their records.

References

[Hazardous Waste Management](#) Subject Area

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	<ul style="list-style-type: none"> • Protect wastes from freezing; • In the event of a spill, breakage, or leakage, follow the requirements in the Spill Response Subject Area. <p>Note: Generators should identify routine storage areas and notify the Hazardous Waste Program Manager on the whereabouts of these locations to facilitate pickups.</p>
Step 6	Maintain analytical records or documented process knowledge regarding the constituents of waste being generated and accumulated. Failure to do this can result in expensive analytical costs.
Step 7	<p>Maintain ownership and responsibility for the waste until it is transferred for disposal.</p> <ul style="list-style-type: none"> • If the waste-generating process continues, but the staff person managing the waste leaves BNL, line management must ensure that responsibility for the waste is reassigned. • If the waste generator or the waste-generating process moves to a different location, ensure that the waste is also moved to the new location, or disposition the waste. • If a waste-generating project is interrupted for an extended period (e.g., six months), or discontinued (e.g., the experiment ends), disposition the accumulated waste or consolidate, if appropriate.
Step 8	When the waste is ready for disposal, secure the container lid tightly and ensure that no further waste is added to the container.

Guidelines

1. 90-day accumulation areas or satellite accumulation areas for hazardous waste management may be used when possible to temporarily store industrial or other special wastes (until pick-up). See the [Hazardous Waste Management](#) Subject Area. However, this is **not** a requirement. Separating hazardous waste from industrial or other special wastes by a rope, or cordoning the area off, is recommended to avoid confusion when evaluating regulatory compliance, as the requirements that apply to hazardous waste are stricter, because the risk is higher.
2. The accumulation area should be dry or containers should somehow be protected from moisture. Indoor storage is preferred to protect containers from the elements. If waste must be stored outdoors, contact the Environmental Services Division for approvals, as secondary containment may be required for certain materials. Minimally, place containers on an impervious surface (e.g., asphalt), not directly on the grass or soil. Containers should be protected from the elements, by covering them (e.g., with a tarp) to prevent rusting and water infiltration. Containers with liquids should be elevated off the ground (e.g., placed on pallets) to prevent freezing.
3. For containers where waste is being continually added, tubes should run through a stopper with a hole in it, or a self-closing funnel with a lid should be used to prevent

spillage and evaporation.

4. Aqueous waste that may be discharged to the sewer (in accordance with the [Liquid Effluents](#) Subject Area) should not be stored in unlined steel drums, as this may result in metals contamination.
5. Additional Guidelines for containers:
 - For single wastes streams with volumes less than five gallons, it is acceptable to use the original container the raw material was shipped in, as long the container is in good condition.
 - For single waste streams with volumes greater than five gallons, accumulation must be in shipping containers
 - **Do not** use glass containers larger than four liters for chemical accumulation.
6. Ensure that the container is protected and that unauthorized (unapproved wastes) additions cannot be made. (e.g., identify one person in charge of adding new materials to a specific waste container. That person may lock that container under his/her control. If more than one person is contributing waste to a specific waste container, then maintain an inventory sheet that tracks additions to the container. The inventory sheet should list the type of material, volume, date added, and name.

Refer to the [How Do I Manage this Waste Stream?](#) Web site for additional guidance on managing a variety of waste streams.

References

[Chemicals, Working With](#) Subject Area

[Hazardous Waste Management](#) Subject Area

[How Do I Manage this Waste Stream?](#) Web site

[Liquid Effluents](#) Subject Area

[Spill Response](#) Subject Area

[Storage and Transfer of Hazardous and Nonhazardous Materials](#) Subject Area

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4. Used Oil for On-site Energy Recovery

Effective Date: **February 2004**

Point of Contact: [Industrial Waste Program Manager](#)

Applicability

This information applies to BNL staff and non-BNL staff in Departments/Divisions that accumulate used oil in quantities that economically justify burning at the Central Steam Plant for energy recovery.

Required Procedure

Used oil intended for burning for energy recovery at the Central Steam Facility must be analyzed, or there must be sufficient process knowledge to ensure it meets New York State regulations 6 NYCRR Part 374-2 and 225-2, Used Oil Specifications and the Laboratory's Title V Air Permit.

The responsible individual (waste generator) is responsible for ensuring that used oil to be burned for energy recovery meets the receiving facility's waste acceptance criteria.

For off-site energy recovery, see the section [Industrial Waste for Off-Site Energy Recovery](#).

Step 1	<p>To be cost-effective, the quantity of used oil must exceed a predetermined amount. If less than the predetermined amount is exceeded, direct used oil through the Environmental & Waste Management Services Division (EWMSD), or through a used-oil recycler, if certain criteria are met. See step 4. No other chemical substances or mixtures, such as hazardous wastes, can be added.</p> <p>Note: EWMSD has the capability to bulk used oil to reach the minimum quantity. Contact the Waste Management Program Manager for more information.</p>
Step 2	<p>The responsible individual must ensure the used oil meets the Central Steam Facility's waste acceptance criteria.</p> <p>The Central Steam Facility requires analysis of waste oils each time they are</p>

	<p>submitted for energy recovery. Collect a representative sample of the used oil and have it analyzed for the constituents listed in the exhibit Waste Oil Analysis Requirements, using the designated test methods.</p> <p>Note: The laboratory conducting the analysis must be accredited by the NYS Environmental Laboratory Accreditation Program (ELAP).</p>
Step 3	The generator submits the analytical report to the Environmental Compliance Representative (ECR) for review and approval.
Step 4	<p>If the analysis for used oil to be burned at the Central Steam Facility shows that the used oil meets the definition of "on-specification used oil," the ECR prepares written notification to the used oil generator, Steam Plant Supervisor, and appropriate Environmental & Waste Management Services Division personnel, designating the used oil as "on-specification used oil suitable for burning at the Central Steam Facility for energy recovery."</p> <p>If used oil does not meet the definition of "on-specification used oil," the ECR prepares written notification and submits it to the used oil generator with instructions for proper disposal through the EMWSD.</p> <p>If used oil does not meet the applicable allowable levels, the ECR prepares written notification and submits it to the used oil generator with instructions for proper disposal through EMWSD.</p>
Step 5	After the Central Steam Facility receives the above approval from the ECR, they arrange for pickup.
Step 6	Store used oil must within containers that are in good condition (no severe rusting, apparent structural defects, or deterioration) and/or in tanks registered by appropriate regulatory entities (e.g., NYSDEC - Petroleum Bulk Storage, SCDHS Article 12). Additionally, the containers and/or tanks must comply with all elements of the site's Spill Prevention Control and Countermeasure (SPCC) Plan. Appropriate "USED OIL" labeling must also be affixed to all containers and/or tanks, including fill lines.

Guidelines

Retest the oil at least once every three years, or when the process generating the used oil changes.

The generators should maintain a copy of the analytical results for their records.

References

6 NYCRR Part 374-2 and 225-2, Used Oil Specifications

NYSDEC - Petroleum Bulk Storage, SCDHS Article 12


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5. Managing Recyclables

Effective Date: **February 2004**

Point of Contact: [Industrial Waste Program Manager](#)

Applicability

This information applies to BNL staff and non-BNL staff who prepare and submit industrial or special waste for recycling.

Required Procedure

Industrial or special waste for recycling consists of aluminum cans, plastic bottles, glass, empty (no residual pressure) aerosol cans, excess equipment, metal chips and turnings from machining operations, and printer toner cartridges. Recycling conserves valuable natural resources, reduces pollution, reduces waste disposal costs, and conserves limited solid waste landfill capacity.

Recyclables are segregated and collected in designated containers/areas.

Managing Recyclables contains ten subsections:

[5.1 Aerosol Cans](#)

[5.2 Batteries for Reclamation or Recycling](#)

[5.3 Bottles and Cans](#)

[5.4 Cardboard](#)

[5.5 Excess Equipment](#)

[5.6 Lead Solder Waste Being Collected for Recycling](#)

[5.7 Paper \(Magazines, Newspaper, Office Paper, Phonebooks\)](#)

[5.8 Toner Cartridges \(Printer and Toner\)](#)

[5.9 Scrap Metal](#)

[5.10 Used Oil Filters](#)

The waste generator follows this procedure to submit industrial or special waste for recycling when the waste container is full, or the generating process ends (e.g., the project is terminated).

5.1 Aerosol Cans

Step 1	Ensure the aerosol can is empty (contents are not felt when the can is shaken and the internal pressure is at atmospheric pressure) and did not contain an acutely hazardous material. If the aerosol can does not meet these criteria, then it is a hazardous waste and must be disposed of according to the Hazardous Waste Management Subject Area. Empty and nonempty pesticide aerosol cans must be managed as hazardous waste.
Step 2	Place cans in plastic bags (available from the Recycling Coordinator).
Step 3	Label the bag with the green Nonhazardous Waste Label.* Mark "Empty Aerosol Cans" on the label. *Labels are stock items that can be obtained from Supply & Materiel.
Step 4	Contact the Recycling Coordinator for pick up when the bags are full.

5.2 Batteries for Reclamation or Recycling

For batteries meeting the definition of "universal wastes," see the section on [Batteries](#) on the [How Do I Manage this Waste Stream?](#) Web site. This procedure applies exclusively to batteries not containing hazardous constituents (e.g., alkaline/flashlight batteries), and specifically to recyclable automotive lead-acid batteries.

Lead-acid batteries not being regenerated (e.g., electrolyte replacement) or reclaimed must be managed in accordance with the [Hazardous Waste Management](#) Subject Area.

Step 1	<p>The responsible individual must</p> <ul style="list-style-type: none"> • Segregate batteries by type; • Where possible, place a nonconductive material over the electrodes to prevent shorts; • Store rechargeable batteries that are not fully discharged to prevent contact with other electrodes, or a metal object, such as the inside of a metal drum.
Step 2	<p>Arrange for pickup and recycling.</p> <ul style="list-style-type: none"> • For batteries other than lead-acid (automotive type): Contact the Hazardous Waste Program Manager to arrange for pickup and recycling. • Using suitable Personal Protective Equipment, bring lead-acid batteries (e.g., automotive) to the BNL Motor Pool (Building 423) for recycling. (Note: the Motor Pool does not accept sealed gel cell batteries). <ul style="list-style-type: none"> ◦ Do not empty the liquid contents of lead-acid batteries. ◦ Store lead-acid batteries upright, in appropriate secondary containment (e.g., five-gallon plastic bucket).

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5.3 Bottles and Cans

Step 1	Place materials in dedicated recycling containers, designated for aluminum cans, plastic bottles and glass. If you need a recycling container, contact the Recycling Coordinator .
Step 2	To protect custodial and waste-handling staff from injury, broken glass cannot be recycled. Place it in a rigid outer container, such as plasticware or cardboard, marked with the words "glass," and place it in a regular trash receptacle.

5.4 Cardboard

Step 1	Flatten cardboard boxes.
Step 2	Place large quantities of corrugated cardboard in the dumpsters labeled "cardboard only." For small quantities, leave outside your office door for recycling by custodial staff.

5.5 Excess Equipment

Step 1	<p>Contact the Distribution Group Supervisor in PPM to recycle/excess/dispose of excess equipment. Computers and related equipment may be given to local schools through DOE under Executive Order 12999.</p> <p>Office furniture will require an accompanying Process Knowledge Certification Statement (available through Supply and Materiel).</p>
Step 2	Contact the Distribution Group Supervisor in PPM for pickup for recycling.

5.6 Lead Solder Waste Being Collected for Recycling

Step 1	<p>See the exhibit Disposal of Lead Solder Waste in the Lead Subject Area.</p> <p>Note: Lead solder waste not being recycled is a hazardous waste, and must be managed in accordance with the Hazardous Waste Management Subject Area.</p>
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5.7 Paper (Magazines, Newspaper, Office Paper, Phonebooks)

Note: Blueprints and carbonless carbon paper cannot be recycled. Dispose of them as solid waste.

Note: If you are disposing of old records, carbonless carbon paper manufactured before 1979, they may contain PCBs. Refer to the [PCB Management](#) Subject Area.

Step 1	Remove plastic spirals and plastic covers.
Step 2	Place materials in dedicated recycling containers, designated for paper. If you need a larger container for cleaning out offices, contact the Recycling Coordinator .
Step 3	Custodial staff empty and collect the paper.

5.8 Toner Cartridges (Printer and Toner)

Step 1	Place the used cartridge in the package that the replacement (new) cartridge came in.
Step 2	Call the Distribution Group Manager in PPM to request pickup, or place the package in the Procurement & Property Management's drop-off/pickup area in your building. Mark the package "For Recycling."

5.9 Scrap Metal

This section applies to **empty drums for recycling or disposal, lead that is not radiologically contaminated and nonradiologically contaminated metal chips and turnings from machining operations** (Routine metal chips or turnings from steel, stainless steel, aluminum, brass, and copper machining operations.)

Note: Beryllium chips and turnings must be managed in accordance with the [Hazardous Waste Management](#) Subject Area.

Step 1	Segregate metal that is suspected of being radiologically contaminated from clean scrap metal. If the scrap metal needs to be surveyed or has been surveyed for release at any time, it is presumed to be a suspect material, and must be managed in accordance with the DOE moratorium on suspect metals.
Step 2	If there is a significant amount of a specialty metal (e.g., brass, copper, stainless), then segregate the metal turnings by type to enable recycling. Segregation should yield more money back to BNL from the metals recycling vendor.
Step 3	Drain any free liquids (e.g., oil, cutting fluid). Collect the liquid and manage appropriately.
Step 4	The owner must fill out a Scrap Yard Process Knowledge Certification Form (PKCF) , Procurement and Property Management Web site certifying the following: <ul style="list-style-type: none"> • The material has not been stored in a radiological area and that no radioactivity has been added; • The material does not contain any hazardous or regulated substances (such as PCBs, mercury, asbestos); • Materials such as freon, fuels, motor oils and/or hydraulic or vacuum oils

	<p>- Materials such as freon, acids, motor oils and/or hydraulic or vacuum oils have been removed.</p> <p>The PKCF must be submitted to and approved by Procurement and Property Management before acceptance.</p>
Step 5	<p>Collect the scrap metal in an appropriate container. Containers must not leak.</p> <ul style="list-style-type: none"> • For Empty Drums: Label drums with the words "EMPTY." (Note: Do not use the white EMPTY labels available from the EWMSD, as they are special Department of Transportation labels used for empty radioactive containers). Store empty drums with the bungs or covers tightly closed to prevent water infiltration. • If empty drums are being returned to the manufacturer (e.g., for a refund of a deposit), and PPM approved the arrangement, arrange for the manufacturer to pick them up on their next delivery. • For Lead that is not radiologically contaminated: <ul style="list-style-type: none"> ○ Store indoors to protect the lead from the elements. ○ Do not store lead near floor drains. ○ If stored outdoors, place on pallets, on an impervious surface, and cover (e.g., with a tarp). ○ Paint, wrap or otherwise cover bricks to prevent oxidation. • For scrap metal destined to be sent to the "clean" scrap metal yard: <ul style="list-style-type: none"> ○ Contact the Distribution Group Supervisor in PPM to arrange for pickup and/or off-site recycling.

5.10 Used Oil Filters

Used oil filters may be collected as industrial waste and be disposed of through the Waste Management Division, or may be recycled as scrap metal if the following requirements are adhered to

Step 1	Hot-drain the filter (remove the filter from the engine while warm) and immediately drain free flowing oil into the used oil drum or tank.
Step 2	<p>Puncture the filter dome. Place the filter on a rack to drain into a used oil drum or tank for 12 hours.</p> <p>The filter may also be crushed or dismantled in addition to hot draining.</p>
Step 3	Collect oil filters in a metal drum and contact the Distribution Group Supervisor in PPM to arrange for pickup and off-site recycling/disposal.

Guidelines

Batteries

Alkaline batteries manufactured after May 13, 1996 may be disposed of in the trash.

Nickel Metal Hydride batteries and zinc air button cells may be disposed of in the trash, or recycled in accordance with this section.

Scrap Metals

Empty drums may be stacked neatly on their sides, if they are arranged, so they do not roll off pallets.

Segregate high value metals such as aluminum, brass, copper, and stainless steel for recycling.

References

[Hazardous Waste Management](#) Subject Area

[How Do I Manage this Waste Stream?](#) Web site

[Lead](#) Subject Area

[PCB Management](#) Subject Area

[Scrap Yard Process Knowledge Certification Form](#), (PKCF), [Procurement and Property Management](#) Web site


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Subject Area: **Industrial Waste**

6. Industrial Waste for Off-site Energy Recovery

Effective Date: **February 2004**

Point of Contact: [Industrial Waste Program Manager](#)

Applicability

This information applies to BNL staff and non-BNL staff who prepare and ship industrial waste for off-site energy recovery.

Required Procedure

Several types of industrial waste may possess adequate BTU (heat content) value for energy recovery via thermal treatment at a NYSDEC-permitted Waste-To-Energy (WTE) facility. Examples of these waste types are oily rags and rags contaminated with spent cutting fluid, oil spill debris (e.g., speedi-dri, pads, pigs), oily debris (e.g., personnel protective equipment) certain types of ionic filtering resins and/or debris saturated with fuels/other flammables). Wastes contaminated with hazardous materials, such as solvents, lead or mercury cannot be burned for energy recovery, and must be managed in accordance with the [Hazardous Waste Management](#) Subject Area.

Waste-To-Energy (W-T-E) facilities may accept nonhazardous industrial wastes for destruction only after receipt of the appropriate approval. In addition, approval from the applicable state regulatory agency may be required in some cases. These approvals may be obtained by working with the [Industrial Waste Program Manager](#).

Step 1	The waste generator, to ensure that no hazardous materials may become incorporated within their proposed waste stream, must conduct a thorough review/characterization of the waste stream. Include all potential components of the waste stream (i.e., oils, lubricants, clean-up materials) within this review.
Step 2	The Waste Management Division (WMD) and the Industrial Waste Program Manager review these characterizations.
Step 3	The Industrial Waste Program Manager, working in conjunction with the the Environmental & Waste Management Services Division (EWMSD) and the

	<p>receiving Waste-To-Energy (W-T-E) facility, designate final approval.</p> <p>If an approved waste stream has not changed appreciably over time, approvals will be good for a term of three years. After three years the waste streams are subject to a re-characterization.</p>
Step 4	<p>The waste generator places approved waste in an appropriate container.</p> <p>If the waste contains spill debris or spill pads, or other adsorbents, and has the ability to migrate through the container, then use a liner compatible with the waste.</p>
Step 5	<p>Clearly label the contents of all waste.</p> <ul style="list-style-type: none"> Labels must be in conformance with applicable DOT and NYSDEC regulations. Labels must match the customer's approval report. Include the generator's name, address, type of waste, and approval number on the label. <p>Waste that is not labeled or does not match the approval report may be rejected.</p>
Step 6	<p>To prevent shifting or tipping over during transportation, package waste in suitable containers and secure it from movement within the vehicle.</p>
Step 7	<p>Ensure the following for shipping:</p> <ul style="list-style-type: none"> A nonhazardous manifest or bill of lading must accompany each shipment. (Note: Some states, such as Connecticut, require a nonhazardous Ct. manifest for nonhaz). An inventory list of the shipment must be attached to the manifest or bill of lading. A properly permitted (e.g., 6NYCRR Part 364, or other State and/or Local permits) nonhazardous waste hauler must transport the waste off-site. Each special waste delivery must be scheduled appropriately with the receiving W-T-E facility and meet their requirements.

Guidelines

Refer to the [How Do I Manage this Waste Stream?](#) Web site for additional guidance on managing a variety of waste streams.

References

[Hazardous Waste Management](#) Subject Area

[How Do I Manage this Waste Stream?](#) Web site

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List of Industrial and Other Special Wastes

Industrial or other Special Wastes covered by this subject area include the following waste streams that are **not** mixed with any hazardous wastes:

- Antifreeze (ethylene glycol/propylene glycol)
- Construction and demolition debris (non-ACM)
- Empty aerosol cans (no residual pressure, i.e., atmospheric pressure) and drums for recycling or disposal
- Ethidium bromide solutions (treated as per “How do I manage this waste” guidelines) and gels
- Excess equipment (computers and related equipment, office furniture, unused lab glassware, uncontaminated lead, etc.) for recycling (**Note:** CRTs contain lead in the glass and may be recycled by special vendors. However, they should not be land filled)
- Gas cylinders (refillable, unwanted), including lecture bottles that are in good condition, either empty or with contents identified, that did not previously contain hazardous materials. (**Note:** returnable cylinders should be sent back to the gas supplier. Lecture bottles are one-use items and must be disposed. EP will only take MT cylinders that have been de-valved)
- Lead that is not radiologically activated or contaminated (e.g., lead bricks/shield block)
- Lead solder and other recyclable scrap metal not contaminated with hazardous materials being collected for recycling
- Recyclables (empty [atmospheric pressure] aerosol cans that did not previously contain an acutely hazardous material or pesticide, corrugated cardboard, food and beverage containers, magazines, certain metal chips, newspaper, office paper, phone books, solder waste intended for recycling, and toner/printer cartridges)
- Oil: uncontaminated crankcase oil or pump oil, oily rags (**not** contaminated with hazardous materials such as solvents, lead, mercury or other hazardous materials), and rags contaminated with spent cutting fluid, oil filters, oil spill debris, oily debris (e.g., personnel protective equipment) and used oil intended for burning for energy recovery
- Paint waste (latex or other non-ignitable, non-enamel)
- Photographic developer (containing less than 5 mg/l of silver [TCLP] and with a pH above 2 and below 12.5) segregated from silver fixer)
- Wastewater containing trace metals below the regulatory thresholds for qualification as a hazardous waste, but above the thresholds for discharge to the sanitary sewer (see the [Liquid Effluents](#) Subject Area)

Waste Oil Analysis Requirements


Constituent/Property	Acceptance Criteria	Typical Acceptable Test Methods*
Arsenic	≤ 5 ppm (mg/l)	EPA 7060A, 7061A, or 7062
Cadmium	≤ 2 ppm (mg/l)	EPA 6010, 7130, or 7131A
Chromium	≤ 10 ppm (mg/l)	EPA 6010, 7190, or 7191
Lead	≤ 100 ppm (mg/l)	EPA 6010 or 7421
PCBs	≤ 2 ppm (mg/l)	EPA 600/4-81-045
Sulfur**	≤ 0.5 % by weight	ASTM D 4294 or D 2622
Total Halogens	≤ 1000 ppm (mg/l)***	ASTM D808
Flash Point	100 °F Minimum	EPA 1010
Gross Heat Content**	125,000 Btu/gal Minimum	ASTM D 240 or D 4809

NOTE: Most criteria are derived from 6 NYCRR Subpart 374-2 - Table 1 – Specifications for oil used for energy recovery.

* Other test methods may be acceptable, if they are approved by the U.S. Environmental Protection Agency. Check with your Environmental Compliance Representative for approval of other methods.

** Criteria derived from BNL's NYSDEC Title V Air Permit – specific to oil burned at the Steam Facility.

*** Waste oil containing greater than 1000 ppm but less than 4000 ppm total halogens may be burned provided that the generator can submit documentation that demonstrates the waste oil does not contain hazardous wastes.



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Definitions: Industrial Waste

Effective Date: **February 2004**

Point of Contact: [Industrial Waste Program Manager](#)

Term	Definition
Chemical Management System	A database that tracks surplus chemicals stored across the BNL site that are available for use by others instead of purchasing new materials. For more information, see the Chemical Management System (CMS) Web site.
effluent	Any treated or untreated liquid discharge from an experiment, laboratory, process, or building. (Note: This may include storm-water run-off.)
emission	Any treated or untreated discharge to the atmosphere from an experiment, laboratory, process, or building.
hazardous waste	A by-product of certain processes and activities that can pose a substantial or potential hazard to human health or the environment when improperly managed. Hazardous waste possesses at least one of four characteristics (ignitability, corrosivity, reactivity, and toxicity), or appears on special EPA lists.
pollution prevention	<p>Source reduction and other practices that reduce or eliminate the creation of pollutants through</p> <p>Increased efficiency in the use of raw materials, energy, water, or other resources; Protection of natural resources by conservation.</p> <p>Pollution prevention techniques include measures such as material substitution, process changes, inventory control, preventative maintenance, and improved housekeeping.</p>
Pollution Prevention Program	A program that includes preventing or reducing the generation of pollutants, contaminants, hazardous substances, or wastes at the source, as well as reducing the amount of waste for treatment, storage, and disposal through reuse or recycling. For more information, see the Pollution Prevention Web site.
	The individual within a Department/Division responsible for

responsible individual	The individual within a Department/Division responsible for generating the waste. This individual (or their designee) should possess all knowledge pertaining to the generated waste.
source reduction	The reduction or prevention of a hazardous substance, pollutant, or contaminant from entering a waste stream or otherwise from being released to the environment before recycling or treatment.
waste minimization	An approach that focuses on preventing or reducing the generation of pollutants, contaminants, hazardous substances, or wastes. Techniques of waste minimization focus on reuse, volume reduction, and recycling.

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Revision History: Industrial Waste

Point of Contact: [Industrial Waste Program Manager](#)

Revision History of this Subject Area

Date	Description	Management System
February 2004	<p>This subject area describes how industrial and other special wastes are managed.</p> <p>Failure to follow the requirements in this subject area can result in impact to the environment (e.g., contamination of landfills, soil, air, surface or groundwater); impact to human health and safety; disciplinary action; enforcement actions by regulatory agencies (including penalties, fines and shutdown of operations); and significant characterization or clean-up expenses.</p>	Environmental Management System

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